Comparison on the Effect of Tiletamine-Zolazepam and Tramadol Combined with Dexmedetomidine or Xylazine in Cats Undergoing Ovariohysterectomy

A. Chanthawan*, S. Durongphongtorn

1 Department of Veterinary Surgery, Faculty of Veterinary Science, Chulalongkorn University, Bangkok 10330, Thailand *Corresponding author: pure_vet66@hotmail.com

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Introduction

In order to achieve the ideal injectable anesthetic properties, rapid immobilization, good surgical plane of anesthesia, predictable and sufficient duration of effect, rapid recovery, adequate post-operative analgesia, and have a wide margin of safety, balance and multimodal anesthesia should be utilized (1). Objective of this study was to compare the anesthetic effects of dexmedetomidine with xylazine when coadministration with tiletamine-zolazepam and tramadol for ovariohysterectomy in cats.

Materials and Methods

This study was approved by the Animal Care Committee of Chulalongkorn University. Thirty healthy intact, adult female mixed-breed cats weight ranging from 1.0 to 4.5 kg were used. Before the experiment, food and water were withheld for 12 hr and 6 hr, respectively. Cats were randomly assigned into three equal groups.

<table>
<thead>
<tr>
<th>Group</th>
<th>Anesthetics combination</th>
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<tbody>
<tr>
<td>ZT (n=10)</td>
<td>tiletamine-zolazepam (Zoletil®) 5 mg/kg tramadol 4 mg/kg</td>
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<tr>
<td>ZTX (n=10)</td>
<td>tiletamine-zolazepam (Zoletil®) 5 mg/kg tramadol 4 mg/kg and xylazine 1 mg/kg</td>
</tr>
<tr>
<td>ZTD (n=10)</td>
<td>tiletamine-zolazepam (Zoletil®) 5 mg/kg tramadol 4 mg/kg and dexmedetomidine 10 µg/kg</td>
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Elapsed times to lateral recumbency, time to intubation, and time of extubation were recorded after the IM injection of anesthetic regimes. Ovariohysterectomy was performed via left flank approach. Anesthetic monitoring was performed as standard clinical anesthesia including HR, RR, SBP, ETCO₂, SpO₂, body temperature until recovery.

Results and Discussion

All vital parameters during anesthesia were within normal limits and surgeries were performed successfully, with moderate response that requires pausing surgery (67% in ZT and 33% in ZTX). The anesthetic qualities of all combination were shown in figs. 1 -4.

This study confirmed that multimodal anesthesia, alpha-2 agonist, dissociative and synthetic opioid, improve quality of anesthesia (2). Combination of tiletamine-zolazepam, tramadol and dexmedetomidine provides excellent immobilization and better surgical plane of anesthesia.

References